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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,051	01/28/2004	Malte Kumkar	15540-020US1 / 25 216	9616
26171	7590	11/14/2005	RK/	
FISH & RICHARDSON P.C. P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			EXAMINER VAN ROY, TOD THOMAS	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 11/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/765,051	Applicant(s) KUMKAR ET AL.	
	Examiner Tod T. Van Roy	Art Unit 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/26/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Germany on 07/28/2001. It is noted, however, that applicant has not filed a certified copy of the DE10137069.5 application as required by 35 U.S.C. 119(b).

Drawings

Figure 5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Tidwell (WO 93/23899, applicant submitted art).

With respect to claim 1, Tidwell discloses an apparatus for optically pumping a laser-active solid body with pumping light coupled into the solid body through an end surface of the solid body (fig.1), the apparatus comprising: a laser-active solid body (fig.1 #4) including an end surface through which pumping light is coupled into the solid body (fig.1 #6) and a lateral surface through which pumping light exits the solid body (fig.1 #8); a reflector surrounding the laser-active solid body at a distance from the lateral surface of the solid body for reflecting light that exists the solid body back towards the solid body (pg.4 lines 20-27 side surface, and 28-35 coating); and a surface for diffusing light (pg.5 lines 1-6 coating, and 7-11 side surface) that is coupled into the solid body through the end surface of the solid body and that exits the solid body through the lateral surface, wherein the surface is selected from the group consisting of the lateral surface and a surface of the reflector.

With respect to claim 2, Tidwell discloses the surface for diffusing light is the lateral surface (pg.5 lines 7-11).

With respect to claim 3, Tidwell discloses the reflector has a surface that diffusely reflects the exiting pumping light (pg.5 lines 11-14, the applied coating would take the shaped of the roughed pattern directly contacting the laser rod, and hence would have diffusive properties when the exiting light would strike these uneven surfaces).

With respect to claim 4, Tidwell discloses the reflector has a mirror like reflecting smooth surface for reflecting the exiting pump light (pg.5 lines 11-14, the applied

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coating would fill the uneven grooves near the surface, and would then be smooth at the points outside of the filled grooves, having a mirror like reflecting smooth surface).

With respect to claim 5, Tidwell discloses the surface for diffusing light is the surface of the reflector (pg.5 lines 1-6, and additionally- pg.5 lines 11-14, the applied coating would take the shaped of the roughed pattern directly contacting the laser rod, and hence would have diffusive properties when the exiting light would strike these uneven surfaces).

With respect to claim 6, Tidwell discloses the lateral surface of the solid body also has a surface that diffuses the exiting pump light (pg.5 lines 7-11, plus reflective coating, see claim 5)

With respect to claim 7, Tidwell discloses the lateral surface of the solid body has a mirror like smooth surface (pg.4 lines 20-27, total internal reflections coming from smooth outer surface of the rod).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tidwell in view of Honea et al. (US 2002/0118718).

With respect to claim 8, Tidwell teaches the apparatus as described in the rejection to claim 1, including a medium disposed on the outside of the lateral surface (pg.4 lines 28-30), but does not teach the medium to be of a higher refractive index. Honea teaches a solid state pumping apparatus that uses a medium of high refractive index ([0006]). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Tidwell with the index difference of Honea in order to suppress parasitic oscillations in the active media (Honea, [0006]).

With respect to claim 9, Tidwell and Honea teach the apparatus as outlined in the rejection to claim 8, and Tidwell further teaches the medium to be disposed in the form of a layer on the lateral surface (pg.4 lines 28-30).

With respect to claim 10, Tidwell and Honea teach the apparatus as outlined in the rejection to claim 8, and Tidwell further teaches the reflector has a surface that diffusely reflects exiting pumping light (pg.5 lines 1-6).

Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tidwell in view of Yasui et al. (US 5359616).

With respect to claims 11 and 12, Tidwell teaches the apparatus as described in the rejection to claim 1, but does not teach a cooling medium (water) to flow between a gap between the solid body and reflector. Yasui teaches a pumped solid state device wherein a cooling medium (fig.1b #70) flows between a gap in the solid body (fig.1b #3) and the reflector (fig.1b #6). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Tidwell with the spaced reflecting chamber of Yasui in order to provide external protection and isolation of the laser media, as well as the coolant flow (water, fig.5, - readily available, cheap, well known to use for cooling purposes), in order to reduce the induced stress realized by the active media.

Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tidwell.

With respect to claims 13-15, Tidwell discloses the apparatus including all of the limitations in claim 1, but does not teach the amount of light which is diffused. It would have been obvious to one of ordinary skill in the art at the time of the invention to choose the amount of diffused light to be 3, 20, or 40 percent as it has been found to be not inventive to discover the optimum, or working, range by routine experimentation (see MPEP 2144.05 II A - In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)).

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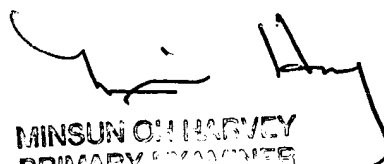
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tod T. Van Roy whose telephone number is (571)272-8447. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on (571)272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TVR


MINSUN O. HARVEY
PRIMARY EXAMINER